P4i45D+

Quick Installation Guide

English
简体中文
Deutsch
Français
Italiano
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ASRock

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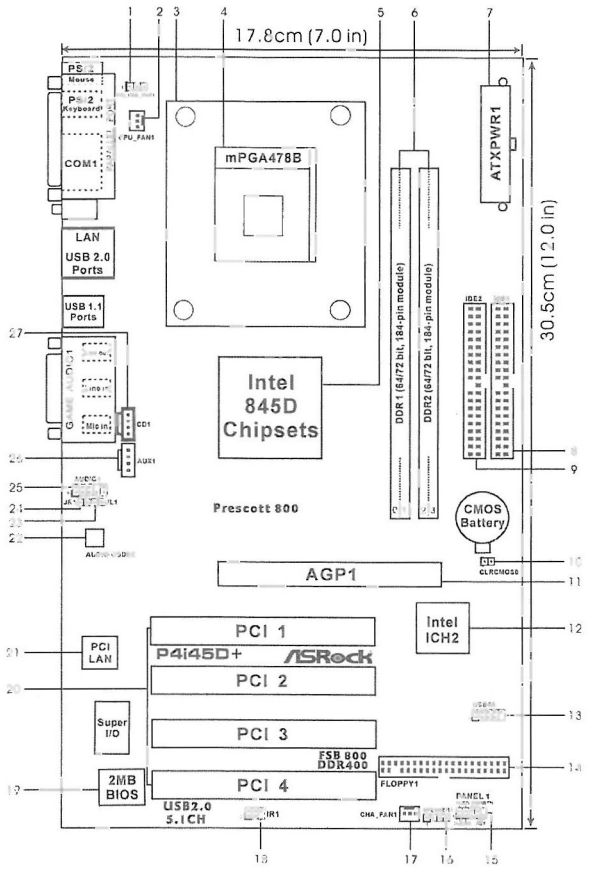
English

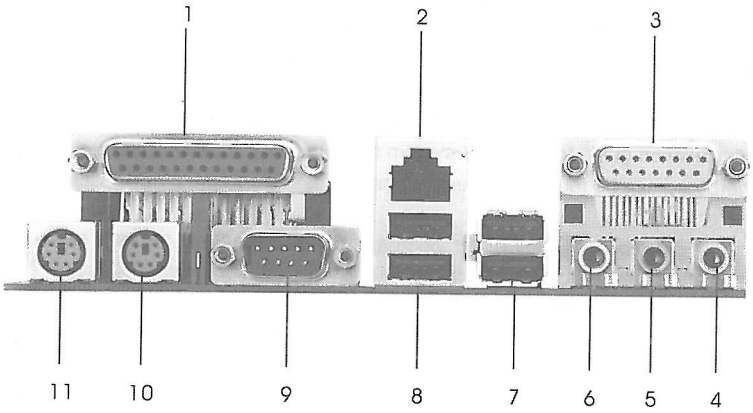
Motherboard Layout



1	PS2_USB_PWR1 jumper	2	CPU fan connector (CPU_FAN1)
3	CPU heatsink retention module	4	CPU socket
5	North Bridge controller	6	184-pin DDR DIMM slots (DDR 1- 2)
7	ATX power connector (ATXPWR1)	8	Primary IDE connector (IDE1, Blue)
9	Secondary IDE connector (IDE2, Black)	10	Clear CMOS (CLRCMOS0, 2-pin jumper)
11	AGP slot (AGP1)	12	South Bridge controller
13	USB 2.0 header (USB45, Blue)	14	Floppy connector (FLOPPY1)
15	System panel connector (PANEL1)	16	External speaker connector (SPEAKER 1)
17	Chassis fan connector (CHA_FAN1)	18	Infrared module connector (IR1)
19	BIOS FWH chip	20	PCI slots (PCI 1- 4)
21	PCI LAN	22	AUDIO CODEC
23	JL1 jumper	24	JR1 jumper
25	Front panel audio connector (AUDIO1)	26	Internal audio connector: AUX1 (White)
27	Internal audio connector: CD1 (Black)		

English

ASRock I/O™



1	Parallel port	2	RJ-45 port
3	Game port	4	Microphone (Pink)
5	Line In (Light Blue)	6	Line Out (Lime)
7	USB 1.1 ports (USB 2,3)	8	USB 2.0 ports (USB 0,1)
9	Serial port (COM1)	10	PS/2 keyboard port (Purple)
11	PS/2 mouse port (Green)		

English

1. Introduction

Thank you for purchasing ASRock P4i45D+ motherboard, a reliable motherboard produced under ASRock's consistently stringent quality control. It delivers excellent performance with robust design conforming to ASRock's commitment to quality and endurance.

This Quick Installation Guide contains introduction of the motherboard and step-by-step installation guide for new DIY system builders. More detailed information of the motherboard can be found in the user manual presented in the product CD-ROM.

Because the motherboard specifications and the BIOS software might be updated, the content of this manual will be subject to change without notice. In case any modifications of this manual occur, the updated version will be available on ASRock website without further notice. You may find the latest memory and CPU support lists on ASRock website as well.
ASRock website http://www.asrock.com

Specifications

Platform:	ATX form factor (12.0" x 7.0", 30.5 x 17.8 cm)
CPU:	Socket 478 for Intel® Pentium® 4/ Celeron® (Prescott, Northwood, Willimate) processor
Chipsets:	North Bridge: Intel® 845D chipsets, standard FSB 400MHz, supports FSB 533MHz / 800MHz at over-clocking mode (see **CAUTION** 1), with Hyper-Threading Technology ready (see **CAUTION** 2); South Bridge: Intel® ICH2
Memory:	2 DDR DIMM Slots: DDR1 and DDR2 supports PC2100(DDR266), Max. 2GB PC3200(DDR400) at overclocking mode, Max.1GB (see **CAUTION** 1)
IDE:	IDE1: ATA 100 / Ultra DMA Mode 5; IDE2: ATA 100 / Ultra DMA Mode 5; Can connect up to 4 IDE devices
Floppy Port:	Supports 1 floppy disk drive
Audio:	5.1 channels AC'97 Audio
PCI LAN:	Speed: 802.3u (10/100 Ethernet), supports Wake-On-LAN

English

Hardware Monitor:	CPU temperature sensing (ASRock U-COP); Chassis temperature sensing; CPU overheat shutdown Vcore to protect CPU life (ASRock U-COP)(see **CAUTION 3**); Voltage monitoring: +12V, +5V, +3V, Vcore; CPU fan tachometer; Chassis fan tachometer
PCI slots:	4 slots with PCI Specification 2.2
AGP slot:	1 AGP slot, supports 1.5V, 4X AGP card (see **CAUTION 4**)
USB 2.0:	2 default USB 2.0 ports with legacy support and 1 extra set of header for two additional USB 2.0 ports upgrade (see **CAUTION 5**)
USB 1.1:	2 default USB 1.1 ports with legacy support
ASRock I/O™:	PS/2: 1 keyboard port / 1 mouse port; 1 RJ 45 port; 2 rear default USB 2.0 ports; 2 rear default USB 1.1 ports 1 serial port: COM 1; 1 parallel port: ECP/EPP support; Audio Jack: Line Out / Line In / Microphone + Game port
BIOS:	AMI legal BIOS; Supports "Plug and Play"; ACPI 1.1 compliance wake up events; Supports jumperfree; SMBIOS 2.3.1 support; CPU frequency stepless control (only for advanced users' reference, see **CAUTION 6**)
OS:	Microsoft® Windows® 98 SE / ME / 2000 / XP compliant

English

CAUTION!

1. Please check the table below for the memory support frequency and its corresponding CPU FSB frequency.

CPU FSB Frequency	Memory Support Frequency
800	DDR400*
533	DDR266
400	DDR266

*Please refer to the NOTE on page 7 for the details.

2. About the setting of "Hyper Threading Technology", please check page 22 of "User Manual" in the Support CD.
3. While CPU overheat is detected, the system will automatically shutdown Vcore. Please check if the CPU fan on the motherboard functions properly before you resume the system. To improve heat dissipation, remember to spray thermal grease between the CPU and the heatsink when you install the PC system.
4. Do NOT use a 3.3V AGP card on P4i45D+'s AGP slot! It may cause permanent damage!
5. Power Management for USB 2.0 works fine under Microsoft® Windows® XP SP1 / 2000 SP4. It may not work properly under Microsoft® Windows® 98/ ME. Please refer to Microsoft® official document at http://www.microsoft.com/whdc/hwdev/bus/USB/USB2support.mspx
6. Although P4i45D+ offers stepless control, it is not recommended to perform over clocking. When the CPU frequency of P4i45D+ is set to perform over clocking, it's Memory clock will also be overclocked proportionally. Frequencies other than the recommended CPU bus frequencies may cause the instability of the system or damage the CPU and the motherboard.

English

NOTE

The Recommended Memory Modules lists for **P4i45D+** motherboard.

FSB 800 MHz / DDR 400 Mode (DIMM1)

DRAM VENDOR	SIZE (MB)	TYPE	CELL VENDOR	CELL NO.	SINGLE SIDE / DOUBLE SIDE
ADATA	512	DDR400	ADATA	ADD8608A8A-58	DOUBLE SIDE
ADATA	256	DDR450	ADATA	ADD8608A8A-4.58	SINGLE SIDE
APACER	256	DDR400	INFINEON	HYB25D256800BT-5	SINGLE SIDE
APACER	256	DDR400	SAMSUNG	K4H560838D-TCCC	SINGLE SIDE
INFINEON	256	DDR400	INFINEON	HYB25D256800BT-5	SINGLE SIDE
KINGMAX	256	DDR400	KINGMAX	KDL3888P4EA-50	SINGLE SIDE
SAMSUNG	256	DDR400	SAMSUNG	K4H560838E-TCC C	SINGLE SIDE
TWINMOS	512	DDR400	M.tec	TTD7608F8E50B	DOUBLE SIDE
TWINMOS	256	DDR400	TWINMOS	TMD7608F8E50B	SINGLE SIDE

Since the memory types are changing rapidly,
Please visit ASRock website (http://www.asrock.com/support/index.htm)
for the latest recommended memory support list.

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2. Installation

Pre-installation Precautions

Take note of the following precautions before you install motherboard components or change any motherboard settings.

1. Unplug the power cord from the wall socket before touching any component. Failure to do so may cause severe damage to the motherboard, peripherals, and/or components.
2. To avoid damaging the motherboard components due to static electricity, NEVER place your motherboard directly on the carpet or the like. Also remember to use a grounded wrist strap or touch a safety grounded object before you handle components.
3. Hold components by the edges and do not touch the ICs.
4. Whenever you uninstall any component, place it on a grounded antistatic pad or in the bag that comes with the component.

2.1 CPU Installation

Step 1. Unlock the socket by lifting the lever up to a 90° angle.

Step 2. Position the CPU directly above the socket such that its marked corner matches the base of the socket lever.

Step 3. Carefully insert the CPU into the socket until it fits in place.

The CPU fits only in one correct orientation. DO NOT force the CPU into the socket to avoid bending of the pins.

Step 4. When the CPU is in place, press it firmly on the socket while you push down the socket lever to secure the CPU. The lever clicks on the side tab to indicate that it is locked.

Step 5. Install CPU fan and heatsink. For proper installation, please kindly refer to the instruction manuals of your CPU fan and heatsink vendors.

2.2 Installation of Memory Modules (DIMM)

This motherboard provides two 184-pin DDR (Double Data Rate) DIMM slots.

Installing a DIMM

Step 1. Unlock a DIMM slot by pressing the retaining clips outward.
Step 2. Align a DIMM on the slot such that the notch on the DIMM matches the break on the slot.
Step 3. Firmly insert the DIMM into the slot until the retaining clip snap back in place and the DIMM is properly seated.

2.3 Expansion Slots (PCI and AGP Slots)

There are 4 PCI slots and 1 AGP slot on this motherboard.

PCI slots: PCI slots are used to install expansion cards that have the 32-bit PCI interface.

AGP slot: The AGP slot is used to install a graphics card. The ASRock AGP slot has a special locking mechanism which can securely fasten the graphics card inserted.

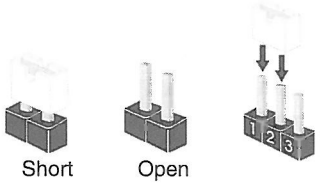
DO NOT use 3.3V AGP card on P4i45D+'s AGP slot!
It may cause permanent damage!

Installing an expansion card

Step 1. Before installing the expansion card, read the documentation of the expansion card and make necessary hardware settings for the card.
Step 2. Remove the bracket facing the slot that you intend to use. Keep the screw for later use.
Step 3. Align the card connector with the slot and press firmly until the card is completely seated on the slot.
Step 4. Fasten the card to the chassis with screws.

2.4 Jumpers Setup

The illustration shows how jumpers are setup. When the jumper cap is placed on pins, the jumper is "SHORT". If no jumper cap is placed on the pins, the jumper is "OPEN". The illustration shows a 3-pin jumper whose pin1 and pin2 are "SHORT" when jumper cap is placed on these 2 pins.



Short Open

Jumper	Setting	Description
PS2_USB_PWR1 (see p.2 item 1)	1_2 +5V / 2_3 +5VSB	Short pin2, pin3 to enable +5VSB (standby) for PS/2 or USB wake up events.

Note: To select +5VSB, it requires 2 Amp and higher standby current provided by power supply.

JR1 (see p.2 item 24)
JL1 (see p.2 item 23)

Note: If the jumpers JL1 and JR1 are short, both the front panel and the rear panel audio connectors can work.

Clear CMOS
CLRCMOS0
(see p.2 item 10)

2-pin jumper

Note: CLRCMOS0 allows you to clear the data in CMOS. The data in CMOS includes system setup information such as system password, date, time, and system setup parameters. To clear and reset the system parameters to default setup, please turn off the computer and unplug the power cord, then use a jumper cap to short the pins on CLRCMOS0 for 3 seconds. Please remember to remove the jumper cap after clearing the CMOS.

English

2.5 Connectors

Connectors are NOT jumpers. DO NOT place jumper caps over these connectors.

Connector	Figure	Description
FDD connector (33-pin FLOPPY1) (see p.2 item 14)		

Note: Match the red marking on the floppy ribbon cable with Pin1.

Primary IDE connector (Blue)
(39-pin IDE1, see p.2 item 8)

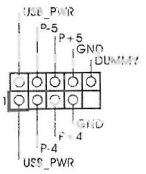
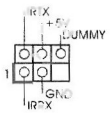
Secondary IDE connector (Black)
(39-pin IDE2, see p.2 item 9)

connect the blue end to the motherboard

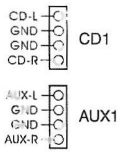
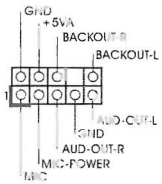
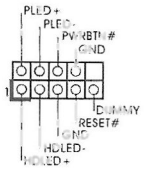
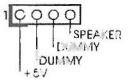
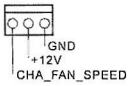
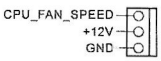
connect the black end to the IDE devices

80-Pin ATA 100 cable

Note: To optimize compatibility and performance, please connect your hard disk drive to the primary IDE connector (IDE1, blue) and CD-ROM to the secondary IDE connector (IDE2, black).

USB 2.0 header (9-pin USB45) (see p.2 item 13)		ASRock I/O™ on P4i45D+ motherboard provides you 2 default USB 2.0 ports. If the default USB ports on the rear panel are not sufficient, this extra USB 2.0 header is available to support 2 additional USB 2.0 ports.
Infrared module connector (5-pin IR1) (see p.2 item 18)		This connector supports an optional wireless transmitting and receiving infrared module.

English

Internal audio connectors (4-pin CD1, 4-pin AUX1) (CD1: see p.2 item 27) (AUX1: see p.2 item 26)		These connectors allow you to receive stereo audio input from sound sources such as a CD-ROM, DVD-ROM, TV tuner card, or MPEG card.
Front panel audio connector (9-pin AUDIO1) (see p.2 item 25)		This is an interface for front panel audio cable that allows convenient connection and control of audio devices.
System panel connector (9-pin PANEL1) (see p.2 item 15)		This connector accommodates several system front panel functions.
Chassis speaker connector (4-pin SPEAKER 1) (see p.2 item 16)		This connector allows you to attach to an external speaker.
Chassis fan connector (3-pin CHA_FAN1) (see p.2 item 17)		Connect the fan cable to the connector matching the black wire to the ground pin.
CPU fan connector (3-pin CPU_FAN1) (see p.2 item 2)		Connect the fan cable to the connector matching the black wire to the ground pin.
ATX power connector (20-pin ATXPWR1) (see p.2 item 7)		Connect an ATX power supply to the connector.

English

3. BIOS Information

The BIOS FWH chip on the motherboard stores BIOS Setup Utility. When you start up the computer, please press <F2> during the Power-On-Self-Test (POST) to enter BIOS Setup utility; otherwise, POST continues with its test routines. If you wish to enter BIOS Setup after POST, please restart the system by pressing <Ctl> + <Alt> + <Delete>, or pressing the reset button on the system chassis.

The BIOS Setup program is designed to be user-friendly. It is a menu-driven program, which allows you to scroll through its various sub-menus and to select among the predetermined choices. For the detailed information about BIOS Setup, please refer to the User Manual (PDF file) contained in the Support CD.

4. Software Support CD information

This motherboard supports various Microsoft® Windows® operating systems: 98 SE/ ME / 2000 / XP. The Support CD that came with the motherboard contains necessary drivers and useful utilities that will enhance motherboard features.

To begin using the Support CD, insert the CD into your CD-ROM drive. It will display the Main Menu automatically if "AUTORUN" is enabled in your computer. If the Main Menu does not appear automatically, locate and double-click on the file ASSETUP. EXE from the BIN folder in the Support CD to display the menus.

"PC-DIY Live Demo"

ASRock presents you a multimedia PC-DIY live demo, which shows you how to install your own PC system step by step. To see this demo program, you can run Microsoft® Media Player® to play the file. You can find the file in the Support CD through the following path:

..\ MPEGAV \ AVSEQ01.DAT

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